Appl. No. 10/649,335
Rule 312 Amdt. dated May 24, 2006
In Reply to Notice of Allowability of Feb. 24, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Previously Presented) A method of interference reduction in a spread spectrum receiver including a rake receiver having a plurality of fingers for processing a plurality of data signals and an associated plurality of pilot signals, the method comprising:

generating a plurality of intra-finger interference cancellation signals using said plurality of pilot signals, each of said plurality of intra-finger interference cancellation signals being associated with one of said plurality of fingers;

weighting ones of said plurality of intra-finger interference cancellation signals so as to generate a set of weighted intra-finger interference cancellation signals;

synthesizing at least one inter-finger interference cancellation signal in accordance with said set of weighted intra-finger interference cancellation signals;

receiving, by said plurality of fingers, said at least one inter-finger interference cancellation signal, wherein different ones of the plurality of fingers can receive different ones of said at least one inter-finger interference cancellation signal; and

subtracting said at least one inter-finger cancellation signal from one of said plurality of data signals.

2. (Previously Presented) The method of claim 1 wherein said plurality of fingers is comprised of N fingers, wherein N is an integer, and wherein said set is comprised of N-1 weighted intra-finger interference cancellation signals.

3. (Currently Amended) The method of claim 1 wherein said synthesizing further includes generating ~~said~~ a plurality of inter-finger interference cancellation signals respectively associated with said plurality of fingers, each of said inter-finger interference cancellation signals being synthesized in accordance with a different group of ones of said set of weighted

intra-finger interference cancellation signals.

4. (Previously Presented) The method of claim 3 wherein said subtracting further includes subtracting each of said plurality of inter-finger interference cancellation signals from a corresponding one of said plurality of data signals, thereby yielding a plurality of interference-reduced data signals.

5. (Original) The method of claim 1 wherein said generating further includes creating a plurality of pilot channel models, each of said plurality of pilot channel models being associated with one of said plurality of fingers.

6. (Original) The method of claim 1 wherein said plurality of pilot signals is comprised of a plurality of primary pilot signals and a corresponding plurality of secondary pilot signals, said generating further including creating a plurality of primary pilot channel models corresponding to said plurality of primary pilot signals and a plurality of secondary pilot channel models corresponding to said plurality of secondary pilot signals.

7. (Previously Presented) The method of claim 5 wherein said generating includes generating a first of said plurality of intra-finger interference cancellation signals within a first of said plurality of fingers, said first of said plurality of intra-finger interference cancellation signals being created based at least in part upon a first of said plurality of pilot channel models associated with said first of said plurality of fingers.

8. (Previously Presented) The method of claim 4 wherein each of said intra-finger interference cancellation signals is generated based at least in part upon one of said plurality of interference-reduced data signals.

9. (Currently Amended) A method of interference reduction in a spread spectrum receiver including a rake receiver having N fingers for processing N data signals and N associated pilot signals, wherein N is an integer, the method comprising:

generating N intra-finger interference cancellation signals using said N associated pilot signals, each of said N intra-finger interference cancellation signals being associated with one of said N fingers;

weighting ones of said N intra-finger interference cancellation signals so as to generate N weighted intra-finger interference cancellation signals;

synthesizing ~~said~~ N inter-finger interference cancellation signals, each of said N inter-finger interference cancellation signals being synthesized on the basis of one or more of said N weighted intra-finger interference cancellation signals; and

subtracting each of said N inter-finger interference cancellation signals from a corresponding one of said N data signals, thereby generating N interference-reduced data signals.

10. (Original) The method of claim 9 further including determining interference levels remaining within said N interference-reduced data signals.

11. (Original) The method of claim 10 wherein said determining is performed in a round robin manner relative to said N fingers.

12. (Original) The method of claim 9 wherein each of said N intra-finger interference cancellation signals is generated on the basis of one of said N interference-reduced data signals.

13. (Original) The method of claim 9 wherein said generating N intra-finger interference cancellation signals further includes creating at least N pilot channel models, each of said N pilot channel models being associated with one of said N fingers.

14. (Previously Presented) A spread spectrum receiver comprising:

a rake receiver having N fingers for processing N data signals and N associated pilot signals, wherein N is an integer, each of said N fingers including an intra-finger interference cancellation module configured to generate an intra-finger interference cancellation signal using at least one of said N associated pilot signals; and

an inter-finger interference cancellation module for synthesizing N inter-finger interference cancellation signals, each of said N inter-finger interference cancellation signals being synthesized on the basis of a set of said intra-finger interference cancellation signals, said inter-finger interference cancellation module including:

a gain adjustment unit for weighting said intra-finger interference cancellation signals so as to generate a plurality of weighted intra-finger interference cancellation signals, and

a summation unit adapted to combine ones of said plurality of weighted intra-finger interference cancellation signals.

15. (Previously Presented) The receiver of claim 14 wherein each of said intra-finger interference cancellation modules includes a subtraction unit to which is applied one of said N inter-finger interference cancellation signals and one of said N data signals, thereby yielding N interference-reduced data signals.

16. (Previously Presented) The receiver of claim 15 wherein each of said intra-finger interference cancellation modules includes a pilot channel processing module configured to create a pilot channel model, each of said intra-finger interference cancellation signals being generated in accordance with one said pilot channel model and one of said N interference-reduced data signals.

17. (Original) The receiver of claim 15 wherein said inter-finger interference

cancellation module further includes an interference cancellation verification unit adapted to determine interference levels remaining within said N interference-reduced data signals.

18. (Original) The receiver of claim 17 wherein said interference cancellation verification unit is disposed to determine said interference levels in a round robin manner relative to said N fingers.

19. (Previously Presented) The receiver of claim 17 wherein said interference cancellation verification unit is configured to identify ones of said N pilot signals interfering with reception of said N data signals within ones of said N fingers.

20. (Previously Presented) The method of claim 1 further including identifying ones of said plurality of pilot signals interfering with reception of said plurality of data signals within ones of said plurality of fingers.